![KGI KECK GRADUATE INSTITUTE logo]

**HENRY E. RIGGS SCHOOL OF APPLIED LIFE SCIENCES**

Master of Science in Human Genetics and Genomic Data Analytics

MSGDA

The MSGDA degree program prepares students for the exciting field of genomic data analytics through a unique combination of foundational coursework in human genetics, cutting-edge courses in the applied life sciences, and an innovative human genomics curriculum. This unique program gives students an opportunity to work side-by-side with future genetic counselors and applied life scientists while gaining hands-on experience with the technologies and information that are revolutionizing the future of medicine.
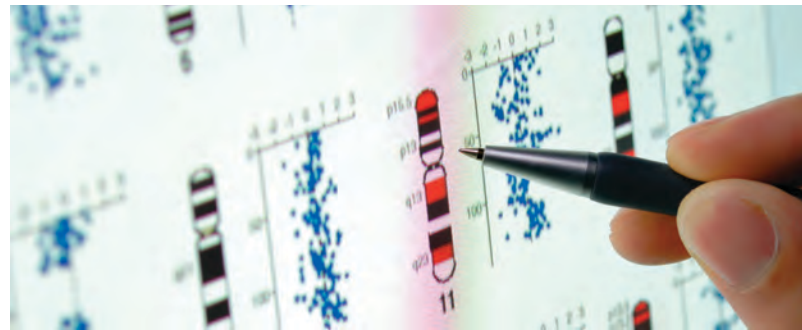
Highlights

Next-gen technology

Be at the forefront of next-generation sequencing technology

Real industry experience

Hands-on project at a genomics company or clinical lab

Bench to bedside

Bridge the gap between research scientists and clinical practitioners

MSGDA concentrations

We have three concentrations depending on student interest:

Clinical decision support—Designed for those interested in helping clinicians interpret patient data for personalized medicine in careers such as clinical variant curator or genomic data scientist.

Clinical trial design—Designed for those interested in contributing to personalized medicine by working at a pharmaceutical or biotech company in the drug development pipeline.

Assay development—Designed for those interested in using genomics knowledge to develop new clinical assays or products for the diagnosis of disease.

All three concentrations prepare students for a variety of roles in not just the genomics industry, but also academia, pharmacogenomics, and more.

About the program

The 21-month MSGDA program combines coursework from life sciences and health sciences, practical experience through a summer internship, and hands-on learning in clinical genetics, DNA sequencing, and data analysis to prepare students for careers in human genomics. Upon completion of the program, students will be able to utilize their foundation in genetics and genomics, practical knowledge of data analytics and bioinformatics, and their industry experience to be able to translate patient sequencing data into actionable clinical recommendations or novel precision medicine approaches.

Year 1

In the first year, students gain a solid foundation in human genetics and genomics, medical genetics, bioinformatics, and an introduction to working in the bioscience industry and clinical settings. Students also learn about clinical trial design and data systems used in the bioscience industry and gain hands-on laboratory experience by generating and manipulating next-generation sequencing data.

In the summer, students will gain experience in human genomic data analysis by completing an internship in an industry or clinical laboratory setting.

Year 2

In the second year, students pursue in-depth courses in next-generation sequencing technologies, DNA variant interpretation, and genomic data visualization. Emerging topics in genomics, such as pharmacogenomics and genetic engineering, are covered and prepare students for their capstone industry-sponsored project or research thesis.

Why pursue a degree in genomic data analytics at KGI?

- Join the growing field of genomics and help create effective and appropriate treatments for patients

- Learn to harness the power of Big Data to help patients through personalized precision medicine

- Distinguish yourself on the job market through team project experiences and internships with genetics companies

- Understand how emerging companies (like 23andMe.com and ancestry.com) translate genotype data

- Help people on a large scale by improving clinical results

- Be at the forefront of next-generation sequencing technology

- Experience inter-professional education through collaboration with students from other KGI programs

- Combine your passions to make a broad-scale impact in the world of genetics and genomics
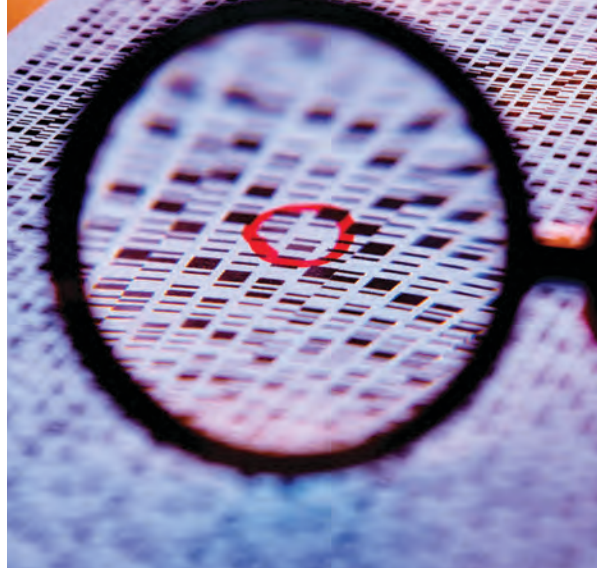
How to apply

Dates and deadlines

Start terms: Fall

Application deadline: December 15 (priority), rolling admissions thereafter

Prerequisites

The following courses are required for admission with a grade of C or better:

- Chemistry
- Biology
- Genetics

Courses in statistics, computer science, biochemistry, and social science are also highly recommended.

Application requirements:

- Completed online application
- Personal statement
- Resume
- Letter of recommendation
- Transcripts
- English language proficiency (TOEFL, PTE, IELTS, iTEP)
- $75 non-refundable application fee

Admission interviews:

- Phone
- Virtual
- On-campus

Admitted students are required to submit a $400 non-refundable enrollment fee to hold their spot in the program.

Contact us

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For more information, please visit kgi.edu/msgda